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RESEARCH ARTICLE

OCCURRENCE OF MACROCYBE GIGANTEA A WILD EDIBLE MUSHROOM FROM KARNATAKA, INDIA - A NEW REPORT

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Abstract

Macrocybe gigantea (Massee) Pegler & Lodge is reported for the first time from Karnataka. Its occurrence from Kolar district, Karnataka state forms an extended distribution. A brief description and photographs of the fungus are provided for easy identification.

Introduction:-

The genus *Macrocybe* Pegler & Lodge belongs to the family Tricholomataceae of the order Agaricales. Earlier it was treated under *Tricholoma* until Pegler & al., 1998 segregated Macrocybe from *Tricholoma*. It has been separated from the genera *Tricholoma* and Calocybe using ITS-rDNA based phylogeny (Razaq & al., 2016). The genus *Macrocybe* is represented by 7 species in the world and is distributed in Tropical Asia (Pegler & al., 1998, Verma & al., 2017). In India it is represented by 5 species (Manimohan & al., 2007; Verma & al., 2017). *Macrocybe crassa* is native to Sri Lanka and is distributed in India (Kerala, Madhya Pradesh, West Bengal), Thailand and Malaysia. *M. lobayensis* is native to West Africa and is extended to India (Kerala, Madhya Pradesh, Tamil Nadu, Uttarakhand, West Bengal). *M. pachymeres* is native to Sri Lanka and is found in India from Madhya Pradesh and Kerala. *M. titans* is native to Florida and is also distributed in Central and South America, Argentina and India from Kerala. *M. gigantea* is native to India from West Bengal. It is reported from Kerala, Meghalaya, Manipur, Mizoram, Punjab, Tripura and is also extended to China, Pakistan and Nepal. Most of the species are saprobic, found growing in clusters or in clumps usually on decayed woods but some of them found growing on elephant dung.

During a visit to the tomato farm yard in Kolar district of Karnataka, one of the authors came across an interesting gigantic mushroom species. Identification of the fungus was carried out with the help of literature (Pegler & al., 1998) and confirmed with the expert opinion from India. Morphological descriptions, host range and distribution of the fungus were dealt and photographs were also taken.

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Plate - I

A

B

C

D

E

Plate - 1: ***Macrocybe gigantea***: **A.** Fruit body growing in tomato farm; **B**: Fruit body showing lamellae with stipe; **C**: view of upper surface of pileus; **D**: showing clusters of fungus; **E**: Tomato farm and fruit body.

Results:-

Taxonomic description

Macrocybe gigantea (Massee) Pegler & Lodge in Pegler, Lodge & Nakasone, Mycologia 90(3): 497. 1998. SEL. DESCR.: Pegler &al., Mycologia 90(3): 497 - 498. 1998; P. Manimohan & al., Mycotaxon 99:152. 2007. *Tricholoma giganteum* Massee, Bull. Misc. Inf. Kew 1912: 254. 1912. (**Plate I**).

This species can be identified by its very large, fleshy, whitish fruit body, does not change colour when bruised; grows in caespitose clusters or clumps on dead wood and weight of the cluster may exceed 30 kg. Pileus are convex to depressed, smooth, glabrous, striate, undulate along margins, white to cream; stipe cylindrical, 15 - 18 x ca 6 cm diameter, white to pale grey, bent; disc upto 3 cm thick; lamellae straw-yellow or brown coloured, closely arranged; margins slightly incurved, scurby after cracking. Basidia 28 - 39 x 5 - 9 µm, narrowly clavate to subcylindrical; basidiopores 5.5 - 6.5 x 3 - 4.5 µm, thin walled, hyaline, smooth; light brown to hyaline; hyphae thin walled, 2 - 6 µm in diameter with clamp connections; spore white with foul odour. It is found in clusters of 3 - 4 fruiting bodies, with pileus of 20 - 30 cm across.

Specimen examined:

India: Karnataka, Kolar district, Beemagnapalli village, Gownipalli, Srinivaspur taluk, Growing on decayed woods of Tamarindus indica, 13 35’ 11.8” N 78 14’ 24.6”E, 5-05-2020, B.R. Mownika 238; Kolar district, Beemaganapalli, on soil surface of tomato farm, 13 35’ 11.8” N 78 14’ 24.6”E, 5-05-2020, B.R. Mownika 239 (Herbarium at mLAC).

Discussion:-

The present study reports the occurrence of *Macrocybe gigantea* an edible wild mushroom from the soil surface of the tomato farm in Beemagnapalli village of Kolar district in Karnataka. It was also found on decayed wood of *Tamarindus indica*. It was collected during early summer monsoon. It was originally described as growing on dead wood and subsequent spotting of the species were found on elephant dung. The growth of the fungus on the soil surface of tomato farm is the first of its kind. The growth of the fungus might be due to the tomato seeds carrying the spores from elsewhere. The other factors include changing climate pattern, monsoons, soil fertility etc. The findings could serve as a foundation for further research and cultivation of the fungus in a larger scale in the area. The indigenous people believe it as a myth. The fungus appearing as a seven headed snake is a symbol of bad omen. It can also be cultivated in summer season.

Uses

From the time immemorial, mushrooms have been consumed by man for their delicious taste and flavour and are rich sources of protein. Most of the species are nutritional and have medicinal properties. *Macrocybe gigantea* is an edible summer mushroom. It is used as food in West Bengal by cooking it with mustard oil and spices. Sometimes ginger and garlic may be added to counter effect the poisonous substances present in it (Dutta & Acharya, 2014).

This wild edible mushroom constitutes significantly not only to the nutritional needs and economic welfare of the people but also plays an important role in nutrient cycling. Their occurrence in the next season was unseen but must be found elsewhere in the locality and need to be surveyed for mass cultivation on a larger scale.

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Conflict of interest:

No.

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